Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of)	
)	
Comment Sought on 911 Resiliency and)	PS Docket No. 11-60
Reliability in Wake of June 29, 2012, Derecho)	
Storm in Central, Mid-Atlantic, and)	
Northeastern United States)	DA 12-1153
)	

COMMENTS OF CTIA - THE WIRELESS ASSOCIATION®

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COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

I. INTRODUCTION AND SUMMARY.

CTIA – The Wireless Association® ("CTIA")¹ hereby submits the following comments in response to the Commission's Public Notice² seeking comment on 911 resiliency and reliability in the wake of the June 29, 2012 derecho storm – a particularly destructive weather event that left millions of Americans without electrical power for extended periods of time. No two disasters are alike, and wireless carriers must have the flexibility to respond quickly and appropriately given the situation. It would be unwise for the Commission to impose any "one-size-fits-all" procedures on wireless carriers. Rather, the Commission can best promote network resiliency and reliability through a flexible approach. The Commission can provide no greater incentive than the carriers' existing interest in protecting their significant network investments and providing wireless consumers with robust service. Allowing wireless carriers to undertake

¹ CTIA is the international association of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular, Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

² Comment Sought on 9-1-1 Resiliency and Reliability in the Wake of June 29, 2012, Derecho Storm in Central, Mid-Atlantic, and Northeastern United States, Public Notice, PS Docket No. 11-60, DA 12-1153 (July 18, 2012) ("Public Notice").

voluntary efforts will lead to the development and utilization of highly effective resiliency and reliability solutions.

There is no doubt that the June 29th derecho was an "extraordinary" event. The morning after the derecho, electric utilities, cooperatives and municipalities reported approximately 4.2 million customers without power across 11 states and the District of Columbia. Restoration efforts in many cases took 7 to 10 days and were complicated by several factors.³ In the face of destructive events such as the derecho, the nation's wireless companies strive to ensure network resiliency and continuity of service. In these comments, CTIA illustrates how the wireless industry has undertaken substantial efforts to promote continuity of service and network resiliency, and continues to develop effective disaster readiness and recovery practices.

II. RELIANCE UPON THE COMPETITIVE MARKETPLACE IS THE MOST EFFECTIVE WAY TO ENSURE NETWORK RESILIENCY AND CONTINUITY OF SERVICE.

A. Wireless Carriers Already Undertake Numerous Efforts to Promote Continuity of Service.

In the Public Notice, the Commission stressed its mission to ensure "the reliability, resiliency, and availability of communications networks in times of emergency." The Commission can best serve this purpose by continuing to allow the industry to develop effective disaster preparation initiatives. Continuity of service is vital, particularly following a major disaster, when many individuals rely on wireless as their sole means of communication. The wireless industry embraces its responsibility to its customers and undertakes multi-faceted efforts to create national and local strategies to promote resiliency of communications infrastructure.

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U.S. Department of Energy, A Review of Outages and Restoration Following the June 2012 Derecho (Aug. 2012), *available at* http://energy.gov/sites/prod/files/Derecho%202012_%20Review_0.pdf.

⁴ Public Notice at 2.

First, carriers promote reliability and network resiliency by building redundant networks where appropriate. Redundancy is a core design principle of mobile broadband networks and is provided through the ability of wireless switches to rapidly and dynamically reroute traffic based on needs and capacity constraints during times of potential overload. Network redundancy enables networks to remain operational even in the event of individual cell site failure.

Numerous carriers have improved network redundancy in disaster-prone areas by fortifying their networks and installing backup generators and other tools and equipment to enhance the stability and, when necessary, the recovery of their wireless operations.⁵

Second, during emergencies carriers may employ portable or temporary base stations to provide network continuity. Carriers may provision cellular base stations on wheels ("COWS"), cellular base stations on light trucks ("COLTS"), and other temporary base stations to act as temporary cell sites in the event of damage to permanent cell sites.⁶ For example, AT&T has

See Media Kit, AT&T, "Storm Preparedness, Hurricane Season 2012," (Mar. 2, 2012), available at http://www.att.com/gen/general?pid=1325 (explaining that AT&T has been installing more generators at critical cell-sites and switching facilities, upgrading electronics, and replacing copper wiring with fiber optic cable in hurricane-prone areas); News Release, Sprint, "Sprint to Waive Late Fees, Overage Charges and Roaming Fees for Joplin, Mo. Residents Affected by Recent Tornado," (May 26, 2011), available at http://newsroom.sprint.com/article_display.cfm?article_id=1924 (In the wake of the tornado in Joplin, Missouri, Sprint Nextel network engineers were able to use their redundant networks to route network capacity to operational cell sites to promote mobile connectivity); News Release, T-Mobile, "T-Mobile Readies for 2012 Hurricane Season", (June 4, 2012), available at http://newsroom.t-mobile.com/articles/T-Mobile-Readies-for-2012-Hurricane-Season ("We have made significant investments in supplemental cell site backup generators, microwave technology equipment and cell-on-wheels (COWs), along with other tools and equipment").

See, e.g. . Press Release, SouthernLINC, "SouthernLINC Wireless Aids Restoration Efforts in Storm-Damaged Southwest", (May 2, 2011) available at http://www.southernlinc.com/pressroom/70-southernlinc-wireless-aids-restoration-efforts-in-storm-damaged-southeast.aspx (explaining that SouthernLINC deployed a COW with an Emergency Microwave Unit to provide additional coverage and capacity in and around a tornado-damaged area in Alabama); News Release, Sprint, "Sprint's Network Disaster Recovery and Emergency Response Teams are Prepared for the Start of 2012 Atlantic Hurricane Season," (May 31, 2012), available at http://newsroom.sprint.com/article_display.cfm?article_id=2299

deployed Satellite COLTS and emergency communications vehicles in response to catastrophic events such as Hurricane Irene, the Joplin, Missouri tornado, tornadoes in Alabama & Tennessee, the Cumberland River flooding in Nashville, and Hurricane Ike.⁷

Third, wireless carriers commonly provision their cell sites and switches with back-up power sources to maintain electrical operations even when grids fail. Among other ways, wireless carriers provide back-up power at facilities through permanent generators installed at a facility's location, with reserve batteries, and by deploying portable generators during emergencies. Verizon Wireless's standard network-reliability features include "battery back-up power at virtually all facilities as well as generators at all switching facilities and many cell site locations." Carriers regularly rely on fixed and portable backup generators to provide power to network assets when local power becomes unavailable.

(explaining that this summer, Sprint pre-staged hurricane-prone areas with Satellite COLTS and COWS to provide immediate restoration of service and help facilitate wireless and IP communications among disaster relief and emergency response agencies); News Release, T-Mobile, "T-Mobile Takes Action to Prepare for Hurricane Earl," (Sept. 2, 2010) *available at* http://newsroom.t-mobile.com/articles/Hurricane-Earl-Preparation (noting that T-Mobile had several COWs pre-staged in neighboring markets [to the storm area] to move in and provide additional wireless communications capabilities in the hardest-hit areas).

News Release, AT&T, "Deployments", last visited Aug. 17, 2012, available at http://www.corp.att.com/ndr/deployment1.html.

News Release, Verizon Wireless, "Verizon Wireless Deploys Repeater to New Mexico's Little Bear Fire Command Center to Help Emergency Crews Make More Calls," (June 14, 2012), *available at* http://news.verizonwireless.com/news/2012/06/pr2012-06-14d.html.

See, e.g., News Release, Leap, "Cricket Prepares for Hurricane Irene," (Aug. 26, 2011), available at http://leapwireless.mediaroom.com/index.php?s=13383&item=53946; News Release, SouthernLINC Wireless, "Success Stories: Southern Utility Company Electrics," (last visited Aug. 17, 2012) available at http://www.southernlinc.com/business/success-stories/18-southern-company-electric-utilities.aspx ("SouthernLINC Wireless built its system with back-up batteries, generators, and towers designed to withstand severe ice and winds"); News Release, Sprint, "Sprint's Network Disaster Recovery and Emergency Response Teams are Prepared for the Start of 2012 Atlantic Hurricane Season," (May 31, 2012), available at http://newsroom.sprint.com/article_display.cfm?article_id=2299; News Release, T-Mobile, "T-

Fourth, carriers tailor their network resiliency and continuity of service plans to the unique needs of individual localities. For example, in various high-risk locations, AT&T has undertaken efforts such as installing more back-up and permanent generators at critical cell sites and switching facilities, locating critical equipment in less vulnerable areas, upgrading electronics in many locations, and elevating switches critical to network operations above expected flood levels. When there is advance notice of a coming event, carriers will stockpile additional supplies, test equipment, re-check inventories, and ensure fuel tanks are at capacity. This site-specific planning stems from the individual assessments conducted by the carriers and depends upon continued flexibility to implement the necessary protections for the particular locality.

Fifth, carriers employ network management techniques to address spikes in traffic likely to occur during an emergency. In certain circumstances, wireless network operators may need to track and manage network loads in real time, shifting network resources to needed areas as

Mobile Readies for 2012 Hurricane Season," (June 4, 2012), *available at* http://newsroom.t-mobile.com/articles/T-Mobile-Readies-for-2012-Hurricane-Season.

Media Kit, AT&T, "Storm Preparedness, Hurricane Season 2012," (Mar. 2, 2012), available at http://www.att.com/gen/general?pid=1325.

See, e.g., News Release, AT&T, "AT&T Stands Ready for 2011 Hurricane Season in the Southeast," (April 28, 2011), available at http://www.att.com/gen/press-room?pid=19790&cdvn=news&newsarticleid=31890&mapcode=mk-att-vital-connections|wireless (listing AT&T's standard pre-storm network preparations); News Release, Leap Wireless, "Cricket Prepares for Hurricane Irene," (Aug. 26, 2011), available at http://leapwireless.mediaroom.com/index.php?s=13383&item=53946 (Explaining that Cricket's engineering, operational and safety and security teams are monitoring the storm's path and activating previously prepared emergency plans, including staging generators strategically just outside the areas likely to be affected and having previously purchased fuel pods standing by to ensure a steady supply of fuel to the generators); News Release, Sprint, "Sprint is Prepared for Hurricane Earl's Impact," (Sept. 1, 2010), available at http://newsroom.sprint.com/article_display.cfm?article_id=1617 ("As it does for every impending tropical storm or hurricane, Sprint is staging backup generators, network engineers, emergency personnel and other critical assets in strategic locations along the Atlantic Coast to manage potential service impacts.").

demanded by the specific situation. AT&T's standard pre-storm network preparations include "adding capacity to the wireless network to accommodate increased call volume." In one case when customers made nearly 40% more calls and data traffic was peaking at 25% above normal following an ice storm, Verizon Wireless's network performed at a high level thanks to the presence of backup batteries and generators at Verizon network cell sites. As a whole, these five strategies have proven extremely successful in preserving and restoring communications during disasters, emergencies, and other large-scale events.

That said, the Commission should recognize that the derecho was an "extraordinary" event. ¹⁴ Pepco has reported that the infrastructure damage caused by the derecho was significantly greater than that caused by Hurricane Irene last year. ¹⁵ Pepco was required to replace almost 300 utility poles and almost 200 transformers – and only then could it begin restoring power, first to critical health and safety facilities, then to homes and businesses. ¹⁶ While the wireless industry can and does go above and beyond to promote the reliability and resiliency of its networks, extraordinary events of this nature – while rare – can and do happen.

Media Kit, AT&T, "Storm Preparedness, Hurricane Season 2012," (Mar. 2, 2012), available at http://www.att.com/gen/general?pid=1325.

News Release, Verizon Wireless, "Backup Generators Keep Verizon Wireless Network Humming in Ice Storm," (Jan. 20, 2012), *available at* http://news.verizonwireless.com/news/2012/01/pr2012-01-23a.html.

As noted *supra* at 2, the morning after the derecho, electric utilities, cooperatives and municipalities reported approximately 4.2 million customers without power across 11 states and the District of Columbia. Restoration efforts in many cases took 7 to 10 days and were complicated by several factors. U.S. Department of Energy, A Review of Outages and Restoration Following the June 2012 Derecho (Aug. 2012), *available at* http://energy.gov/sites/prod/files/Derecho%202012_%20Review_0.pdf.

PepcoConnect's Blog, "Thank You to Our Customers" (July 31, 2012) *available at* http://pepcoconnect.wordpress.com/.

¹⁶ *Id*.

CTIA and its members understand that resiliency and reliability are extremely important to their customers and society. As noted above, there is no incentive that the Commission could give that would be greater than the carriers' existing incentive to protect their significant network investments and to provide robust service to their customers. The wireless industry has demonstrated its commitment to ensuring that its services are well protected during crises through voluntary, industry-based best practices. Accordingly, no new regulation is necessary to promote network reliability.

B. The Wireless Industry Has Supported and Continues To Develop Effective Disaster Preparation Initiatives.

The wireless industry has demonstrated its leadership in the area of disaster preparedness and network continuity through the creation of best practices that promote these critical objectives. For example, CTIA established a Business Continuity/Disaster Recovery Program that provides an annual certification for wireless carriers who have met the planning standards and objectives necessary to ensure that they have prioritized service continuity and disaster recovery. This program consists of ten steps, with several requirements under each step, designed to guide a company in the development of a continuity/disaster recovery program. Significantly, this program accommodates and takes into account the individual decisions of each carrier with respect to its network. As explained above, this kind of flexibility is vitally important to ensure that carriers can respond to unique and unpredictable events.

In addition, using best practices in emergency management and business continuity, carriers to take steps to ensure that network and business operations are uninterrupted or expeditiously restored by taking measures such as: mandatory disaster preparedness and

See Comments of CTIA – The Wireless Association®, PS Docket No. 11-60 at Appendix A (July 7, 2011).

¹⁸ *Id*.

recovery training for all employees, incident command teams for fast and efficient response, investment in tools and systems to improve operational efficiencies, and programs to enable fast mobilization of resources; ¹⁹ continually-refined network continuity best practices based on network disaster recovery teams' experiences; ²⁰ and conducting numerous emergency exercises each year to increase and enhance disaster recovery experience. ²¹

These initiatives enable carriers to refine and improve on their disaster readiness and responsiveness in a variety of scenarios.

Other efforts undertaken by CTIA member companies include the National Infrastructure Protection Plan, a joint effort between the wireless industry and Department of Homeland Security.²² CTIA and members of the wireless industry also have taken leadership roles in the Communications Sector Coordinating Council, which has worked to develop the Communications Sector Specific Plan ("CSSP"). The CSSP aims to establish a coordinated strategic framework for protecting the Nation's critical communications infrastructure.²³ Further, wireless carriers actively participate in the efforts of the Alliance for Telecommunications Industry Solutions ("ATIS") Network Reliability Steering Committee ("NRSC") and the Commission's Communications Security, Reliability and Interoperability

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Sprint Fact Sheet, "Hurricane Preparedness and Tools" (last visited Aug. 13, 2012), available at http://shop.sprint.com/global/pdf/services_solutions/fact_sheet_hurricane_tips.pdf.

AT&T, "AT&T Network Continuity Overview, Best Practices", (last visited Aug. 13, 2012), available at http://www.corp.att.com/ndr/pdf/BP_sec_10331_V05_11_09_04.pdf.

Verizon Wireless, "Emergency Preparedness, How We Prepare", (last visited Aug. 13, 2012), *available at* http://aboutus.verizonwireless.com/Business_Continuity/Prepare.html.

See U.S. Dept. of Homeland Security, *National Infrastructure Protection Plan*, at 1 (2009), *available at* http://www.dhs.gov/xlibrary/assets/NIPP_Plan.pdf.

See U.S. Dept. of Homeland Security, *Communications Sector Specific Plan* (2007), available at http://www.dhs.gov/xlibrary/assets/nipp-ssp-communications.pdf.

Council and former Network Reliability and Interoperability Council, which provide best practices in this area.²⁴

There has been widespread industry participation in the Commission's Disaster Reporting Information System ("DIRS"), a voluntary, web-based system that communications companies can use to report communications infrastructure status and situational awareness information during times of crisis. To date, DIRS information has informed the regular discussions between Commission Staff and wireless carriers regarding evolving best practices. And, as the Commission noted approvingly in the 2004 proceeding on network outage reporting, voluntary and mandatory reporting has "enabled a successful public-private partnership to emerge in which the telephone industry and manufacturers have voluntarily developed best practices that they have been encouraged, but not required, to adopt." These examples and efforts demonstrate that voluntary solutions undertaken by the wireless industry work to promote effective disaster preparation and recovery initiatives.

III. THE COMMISSION CAN BEST PROMOTE NETWORK RESILIENCY AND RELIABILITY THROUGH A FLEXIBLE APPROACH.

A. Providing Flexibility To Carriers Will Enhance Innovation and Enable Effective Responses.

As the examples above demonstrate, carriers have developed response plans for myriad disasters that are tailored to the specific challenges of each event. While the Commission has aimed to use the June 29, 2012 derecho as the backdrop for a broader examination of network

See http://www.fcc.gov/pshs/advisory/csric/members.html (CSRIC membership list); and http://www.nric.org/charter_vii/nric_vii_org.html (NRIC VII membership list).

See Public Safety and Homeland Security Bureau, Disaster Information Report System, (last visited Aug. 13, 2012), available at http://transition.fcc.gov/pshs/services/cip/dirs/dirs.html.

New Part 4 of the Commission's Rules Concerning Disruptions to Communications, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830 at ¶ 15 (2004).

reliability, the reality is that no one incident can fully encapsulate the potential impact on wireless networks caused by natural or man-made disasters. CTIA therefore cautions the Commission against going down a path that overly focuses on response to one kind of incident, or even one type of preparation or response.

As detailed above, through substantial efforts to harden network facilities and planning, training and preparation for emergencies and other demand surges, the wireless industry has had unparalleled success in providing essential communications services when they are needed most. As these voluntary – and widely varied – procedures have been highly successful, attempting to impose any one-size-fits-all procedures would have little benefit and could potentially inhibit innovative means of promoting network resiliency throughout the dynamic wireless ecosystem. With wireless networks undergoing rapid evolution – especially during the transition to 4G technologies – carriers require flexibility to tailor their continuity plans to their own spectrum, infrastructure, population, topography, and other unique attributes. Individual carriers are in the best position to anticipate and implement necessary measures to promote the reliability of their networks; fixed regulations simply do not make sense.

Furthermore, flexibility is necessary because wireless carriers must be cognizant of conditions at the local PSAPs, which may or may not have the network or operational capabilities to handle a massive influx of 911 communications during a major event.²⁷ In many cases, such as in the recent East Coast earthquake, networks performed as designed, but individual PSAPs were overwhelmed with calls that could not be answered due to the excessive

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As the Commission acknowledged in the Text-to-911 proceeding, there are thousands of PSAPs in the United States of varying sizes and technical capabilities. *Facilitating the Deployment of Text-to-911 and Other Next Generation Applications, Framework for Next Generation 911 Deployment*, Notice of Proposed Rulemaking, FCC 11-134 at ¶ 92 (Sept. 22, 2011).

traffic.²⁸ CTIA agrees with the Public Notice's inquiry into appropriate actions not only by wireless carriers, but also PSAPs, to promote 911 connectivity in disasters.²⁹ These factors make it all the more important to preserve flexibility for managing dynamic network operations.

The unique circumstances of a particular disaster will drive the wireless industry's response to it. Wireless carriers need the flexibility to engage in real-time coordination and respond quickly and appropriately to the situation as it occurs. In this regard wireless carriers have been highly successful. Conversely, if the Commission were to mandate the specifics of a network survivability strategy, the end result is nearly certain to be either too specific to be relevant or too vague to be useful. Prescriptive regulation could actually harm network reliability by limiting carriers' ability to innovate. Chairman Genachowski has stressed that "[w]e need rules that serve legitimate public needs without erecting costly or unnecessary barriers." The Commission must keep this guiding principle in mind and recognize that the imposition of regulation is not only unnecessary, but likely counter to the public interest. Carriers already are working tirelessly to promote network resiliency, and compliance with redundant government mandates would risk diversion of resources from these existing efforts.

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See Olga Kharif and Brian Womack, "Verizon, AT&T Say Calling Surges, See No Network Damage," Bloomberg (Aug. 23, 2011), available at http://www.bloomberg.com/news/2011-08-23/verizon-at-t-sprint-say-calling-surges-after-quake-no-network-damages.html. See also Comments of AT&T, PS Docket Nos. 11-153 and 10-255 at iii (filed Dec. 12, 2012) ("The critical bottleneck in reaching emergency personal during such events is the local PSAP operations, which cannot handle unexpected demand levels.").

Public Notice at 4 ("Are there actions that communications service providers and/or PSAPs should take to improve the 9-1-1-restoration process? What, if anything, can the FCC do to assist communications service providers and PSAPs in the restoration process?").

Prepared Remarks of Chairman Julius Genachowski, FCC, Broadband Acceleration Conference, at 1 (Feb. 9, 2011), http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0209/DOC-304571A1.pdf.

Back-up power and its associated challenges provide an example of how prescriptive regulation can create significant challenges for wireless licensees. While wireless carriers have made substantial investments in back-up power solutions, they have in many cases encountered significant obstacles in installing back-up power equipments at particular sites. For example, some cell sites simply have too little available space to install back-up power equipment, while others may not be able to support the weight of back-up power sources. Also, the power systems used by back-up batteries and generators contain lead, sulfuric acid, oils, and flammable liquids that may subject back-up power facilities to a host of federal, state, and local environmental and safety laws that strictly limit their placement and use. These challenges will become progressively more complex as the wireless industry evolves toward the increased deployment of small cell technologies where it is less clear how back-up power would be implemented. In these cases, a COW or COLT may be a better solution than a back-up power source, and carriers should have the flexibility to make such judgments.

Back-up power is just one example of how no two carriers, cell sites, or disasters are alike, and it would be impossible to develop regulations that would work best for them all.

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See, e.g., Petition for Reconsideration of CTIA – The Wireless Association®, EB Docket No. 06-119 (Aug. 10, 2007 ("CTIA Back-Up Power Petition"), at attached Declaration of Bill Leonard, ¶ 6 ("Cricket Back-Up Power Declaration") ("Roughly 100 of Cricket's cell sites, including those located in tight spaces such as closets or in church steeples, do not have sufficient space to add batteries or install generators"); id. at Declaration of Tony Kent, ¶ 8 ("Cellular South Back-Up Power Declaration") ("Cellular South also has antennas located within church steeples or on other pre-existing structures. Often, cell site equipment is located in buildings, basements or other enclosed spaces for such cell sites, which simply do not have sufficient additional space to accommodate the batteries necessary to provide for 8 hours of back-up power or a generator and its fuel supply.").

See, e.g., Cellular South Back-Up Power Declaration at \P 7 ("A number of Cellular South's cell sites are on rooftops. . . . many of those structures may simply not be able to physically support the weight of either additional batteries or a generator.").

See CTIA Back-Up Power Petition at 13-14 (providing examples of safety codes that would be implicated by back-up power requirements).

Wireless consumers have thrived under a model where they have had the flexibility to prepare for and respond to disasters in their own way. The Commission should continue to promote this framework.

B. The Commission Should Not Divert Carrier Resources With Short-Term Requirements.

In the Public Notice, the Commission has asked whether the deployment of next generation 911 solutions will improve the reliability of 911 services. 34 CTIA believes that the innovations contemplated by NG911 have the potential to greatly enhance emergency communications, and that they will play an important role in solidifying the reliability of 911 services. As CTIA has stressed in other proceedings, the Commission should not delay the implementation of NG911 through interim regulations that necessarily require substantial effort by stakeholders and technical experts, significant network and operational resources of wireless providers and PSAPs, and work by regulators to establish a policy framework for this system. Because the wireless industry is in the midst of rolling out next-generation technologies, it further makes sense for the Commission to encourage and focus on the deployment of emergency communications services in emerging technologies such as LTE. This approach will best promote the adoption of services with long-term utility.

IV. **CONCLUSION**

Network reliability and resiliency are vital for wireless customers when major disasters strike, and wireless carriers have made enormous efforts to ensure the stability and reliability of their networks. As these Comments have highlighted, the efforts of the wireless carriers have made a major impact in restoring communications during disasters. Wireless carriers must be able to employ a flexible approach to continue to promote innovation and enable more effective

³⁴ Public Notice at 6.

responses. The Commission should not impose regulations which limit the industry's flexibility in planning for and responding to disasters.

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